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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/552,816	10/11/2005	Raf Lodewijk Jan Roovers	NL 030433	5559
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NXP, B.V. NXP INTELLECTUAL PROPERTY & LICENSING M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER SHAH, TANMAY K	
			ART UNIT 2611	PAPER NUMBER
			NOTIFICATION DATE 06/25/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/552,816	<b>Applicant(s)</b> ROOVERS ET AL.	
	<b>Examiner</b> TANMAY K. SHAH	<b>Art Unit</b> 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,7-14,16,17,19 and 20 is/are rejected.
- 7) ☒ Claim(s) 3,6,15 and 18 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This communication is in response to the Amendment to Application 10/552,816 filed on 3/23/10.

#### *Response to Arguments*

2. Applicant's arguments, see remarks page 9 - 15, filed 3/23/10, with respect to the rejection(s) of claim(s) 1 – 20 under USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Yang et al. (**2004/0141567**) in further view of Matsuo et al. (**US 5,986,599**).

#### *Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1 – 2, 4 - 5, 7 – 14, 16 - 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (**US 2004/0141567**) in further view of Matsuo et al. (**US 5,986,599**).

Regarding claim 1, A communications receiver, comprising a pulse detection unit, for detecting pulses in a received signal, the pulse detection unit comprising:

a plurality of comparators (i.e. **voltage comparators, Fig. 6**);

a sampling time generator (**i.e. clock generator, Fig. 6**) configured to generate timing signals indicative of a plurality of sampling time; points within a received pulse (**i.e. clock and data recovery circuitry uses information from multiple phase detectors to generate one or more data sampling clocks, abstract**); and

a reference level (**i.e. voltage reference generator**), for generating generator configured to generate a plurality of reference levels (**i.e. as shown in Fig. 6, multiple voltage reference level, VR1, VR2...VR3**),

wherein the received signal is applied to each of the comparators such that each of the comparators is configured to produce a respective output signal based on a comparison between the received signal level and the selected reference level at the selected sampling time point (**i.e. as shown in Fig. 6, the reference level signal is compared in voltage comparators and output is provided to amplifier**), However, does not specifically disclose that the comparator is programmable.

Matsuo teaches each of the comparators is programmable with a sampling time point selected from said plurality of sampling time points and with a reference level selected from said plurality of reference levels (**i.e. each voltage comparator comparing a differential voltage of the input signal and an inverted signal thereof and a differential voltage of a pair of reference signals selected from among the plurality of pairs of reference signals, col 6, line 13 – 17**).

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It would have been obvious to one of the ordinary skilled in the art at the time the invention was made to combine the teachings of Cheah with Matsuo. One would be motivated to combine these teachings because in doing so the output will be more précised (col 3, line 38- 40).

Regarding claim 2, Yang with Matsuo teaches claim 1,

Yang further comprises a processor, for detecting in the received signal based on the output signals from the comparators (**i.e. FFs of Fig. 6 detects the output and then it is being delayed**).

Regarding claim 4, Yang with Matsuo teaces claim 1.

Yang firther teaches a pre-amplifier (**i.e. AGC of Fig. 6**), for pre-amplifying the received signal to an appropriate level for comparison with the plurality of reference levels (i.e. as known AGC provides amplifies the gain and provides desired gain).

Regarding claim 5, Yang with Matsuo teaches claim 1, wherein the reference level generator is adapted to scale the generated plurality of reference levels for comparison with the received signal (**i.e. as shown in Fig. 6, the reference level signal is compared in voltage comparators and output is**

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**provided to amplifier, in order to compare it has be measured or find voltage scale of received signal).**

Regarding claim 6, Yang with Matsuo teaches claim 1,

Yang further comprising a current reference, for driving bias currents to said plurality of comparators.

Regarding claim 7, the method has substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 8, the method has substantially same limitations as claim 2, thus the same rejection is applicable.

Regarding claim 9, there are substantially same limitations as claim 4, thus the same rejection is applicable.

Regarding claim 10, there are substantially same limitations as claim 5, thus the same rejection is applicable.

Regarding claim 11, Yang with Matsuo teaches claim 7.

Matsuo further comprising programming the comparators with respective selected sampling time points and reference levels, based on knowledge about

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the possible shapes of said pulses (i.e. **each voltage comparator comparing a differential voltage of the input signal and an inverted signal thereof and a differential voltage of a pair of reference signals selected from among the plurality of pairs of reference signals, col 6, line 13 – 17, level 1 and 0 is the possible shapes of pulses**).

Regarding claim 12, Yang with Matuso teaches method as claimed in claim 7, comprising programming the comparators with respective selected sampling time points and reference levels, based on knowledge about the expected arrival times of said pulses (i.e. **each voltage comparator comparing a differential voltage of the input signal and an inverted signal thereof and a differential voltage of a pair of reference signals selected from among the plurality of pairs of reference signals, col 6, line 13 – 17, level 1 and 0 is the possible shapes of pulses, the sampling of the known and arrived pulses**).

Regarding claim 13, the method has substantially same limitations as claim 1, thus the same rejection is applicable.

Regarding claim 14, the method has substantially same limitations as claim 2, thus the same rejection is applicable.

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Regarding claim 16, there are substantially same limitations as claim 4, thus the same rejection is applicable.

Regarding claim 17, there are substantially same limitations as claim 5, thus the same rejection is applicable.

Regarding claim 18, there are substantially same limitations as claim 6, thus the same rejection is applicable.

5. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yang et al. (**US 2004/0141567**) in further view of Matsuo et al. (**US 5,986,599**) in further view of Cheah et al. (**US 7,286,599**).

Regarding claim 19, Yang with Matuso teaches claim 13, however does not specifically disclose it is a UWB system.

Cheah teaches UWB system (**i.e. UWB system, abstract**).

It would have been obvious to one of the ordinary skilled in the art at the time the invention was made to combine the teachings of Yang and Matuso with Cheah. One would be motivated to combine these teachings the system can be placed in any desired system and will provide accurate output based on the pulse comparison.



Regarding claim 20, the communication receiver as claimed in claim 1, further comprising:

at least one antenna (**i.e. it is inherent to have antenna since it is a wireless system**); and

receive circuitry configured to perform initial radio frequency processing of the received signal (**i.e. AGC performs initial processing based on the received signal**).

#### ***Allowable Subject Matter***

6. Claims 3, 6 and 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANMAY K. SHAH whose telephone number is (571)270-3624. The examiner can normally be reached on Mon-Thu (7:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANMAY K SHAH/  
Examiner, Art Unit 2611

/David C. Payne/  
Supervisory Patent Examiner, Art Unit 2611